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09/976,199	10/11/2001	Robert C. Sundahl	42390P9821	1431

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EXAMINER

LUU, MATTHEW

ART UNIT PAPER NUMBER

2676

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/976,199

Applicant(s)

SUNDAHL ET AL.

Examiner

LUU MATTHEW

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11 and 13-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 11 is objected to because of the following informalities: there are two "having a having a" in the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 10-11, and 13-18, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen et al (6,414,661) in view of Yamazaki et al (6,528,951).

Regarding claim 1, Shen discloses (Figs. 1-3 and 9) a method for at least partially compensating luminance of an emissive display comprising:

estimating the amount of degradation of one or more organic light emitting diodes (OLEDs) included in the emissive display (column 7, lines 19-27); and

adjusting the luminance of the one or more OLEDs based, at least in part, upon the estimate (see Abstract, lines 1-14).

The only difference between the disclosure of Shen et al and the claimed invention is that the claim requires adjusting the luminance so that the luminance remains substantially constant.

However, Yamazaki discloses (Fig. 24) of the luminance of an EL or (OLEDs) element is compensated to almost at a constant level irrespective of the temperature. See column 1, lines 18-22; and column 31, line 49 to column 32, line 14. It is obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of adjusting the luminance of an EL or OLED element at a constant level into the emissive display device of Shen to control the luminance of the OLEDs display elements at a constant level independent of the change in surrounding temperature.

Shen further teaches the new added limitation "having a desired luminance, as a function of time" (Column 4, lines 61-63; column 5, lines 5, lines 5-20; and column 7, lines 50-64).

Regarding claim 11, note the rejection as set forth above with respect to claim 1. Shen further discloses (Fig. 9) one or more OLEDs (display 93); a measurement circuit (voltage sensing 94); and a control system (control 97). Shen further discloses estimating the amount of degradation of one or more organic light emitting diodes (OLEDs) included in the emissive display (column 7, lines 19-27); and adjusting the luminance of the one or more OLEDs based, at least in part, upon the estimate (see Abstract, lines 1-14).

Regarding claim 3, 4, 13 and 15-17, Shen discloses (Fig. 9) the measuring the voltage across one or more OLEDs (column 7, lines 50-61).

Regarding claims 5 and 14, 18 since Shen mentions that the calculation is based on either in the amount of the drive current or voltage (see abstract, lines 7-13), it is obvious to a person of ordinary skill in the art to recognize that the calculation can be in term of the measured reverse bias resistance since it is well-known that the resistance is proportional to the current or voltage.

Regarding claim 6, since Shen mentions that the calculation is based on either in the amount of the drive current or voltage (see abstract, lines 7-13), it is obvious that the calculation can be in term of the electrical energy since the energy is well-known to be calculated using the known current or voltage.

Regarding claim 7, Shen mentions that the calculation is based on either in the amount of the drive current or voltage (see abstract, lines 7-13).

Regarding claim 10, Shen discloses estimating the amount of degradation of one or more organic light emitting diodes (OLEDs) included in the emissive display (column 7, lines 19-27); and adjusting the luminance of the one or more OLEDs based, at least in part, upon the estimate (see Abstract, lines 1-14).

***Claim Rejections - 35 USC § 103***

Claims 8-9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (6,414,661) in view of Yamazaki et al as applied to claims 1 and 11 above, and further in view of Kane (6,229,508).

Regarding claim 8, Shen fails to disclose the step of adjusting using a look up table (LUT).

However, Kane discloses the method of adjusting the brightness of the OLEDs using a look up table (LUT) (column 17, lines 6-15). It would have been obvious to the person of ordinary skill in the art to use the look up table of Kane into the luminance adjusting system of Shen since this is only another alternative way of using the look up memory or a storage medium to adjust the voltage values.

Regarding claim 9, Shen further discloses the luminance of the OLED achieved by the adjustment essentially decreases over time. See column 7, lines 15-18; and column 8, lines 35-40.

Regarding claim 19, note the rejection as set forth above with respect to claim 8. Furthermore, the LUT can also be considered as the claimed storage medium.

***Response to Arguments***

Applicant's arguments filed April 25, 2005 have been fully considered but they are not persuasive.

**The Rejection Under 35 U.S.C. 112**

The rejection under 35 U.S.C. 112, 2<sup>nd</sup> paragraph has been withdrawn.

**The Rejection Under 35 U.S.C. 103(a)**

Claims 1, 3-7, 10-11 and 13-18

The Applicant argues that neither Shen nor Yamazaki teaches the claimed limitation "having a desired luminance, as a function of time" (Claim 1, line 3). The examiner respectfully disagrees.

Shen further teaches the new added limitation "having a desired luminance, as a function of time" (Column 4, lines 61-63; column 5, lines 5, lines 5-20; and column 7, lines 50-64).

"At any time "t" the Luminance "L" of any OLED pixel is approximately proportional to the current (I) in the pixel as set forth in equation (1):

$$L(t) = n(t) \cdot I(t) \quad (1)$$

Where "L" represents the luminance of the pixel, "n" represents the pixel efficiency in converting current, and "I" represents the current passing through the light emitting material. The efficiency as a function of time may be approximated by an exponentially decaying curve. When the decay rate is set to be proportional to the total number of charges that pass through the light emitting device the relationship between efficiency and current as functions of time as shown in equation (2) is obtained:

$$N(t) = n_0 \exp [-I(t) dt / I_0 t_0] \quad (2) \quad \ll \text{(Column 5, lines 5-20).}$$

Claims 8, 9 and 19

Shen clearly teaches the new added limitation "having a desired luminance, as a function of time" (Column 4, lines 61-63; column 5, lines 5, lines 5-20; and column 7, lines 50-64).

Kane discloses the method of adjusting the brightness of the OLEDs using a look up table (LUT) (column 17, lines 6-15). It would have been obvious to the person of ordinary skill in the art to use the look up table of Kane into the luminance adjusting system of Shen since this is only another alternative way of using the look up memory or a storage medium to adjust the voltage values.

Regarding claim 9, Shen further discloses the luminance of the OLED achieved by the adjustment essentially decreases over time. See column 7, lines 15-18; and column 8, lines 35-40.

Regarding claim 19, note the rejection as set forth above with respect to claim 8. Furthermore, the LUT can also be considered as the claimed storage medium.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



Art Unit: 2676

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUU MATTHEW whose telephone number is (571) 272-7663. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BELLA MATTHEW can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Luu



**MATTHEW LUU**  
**PRIMARY EXAMINER**